

Remarks

Claims 1-32, 34, 36-41, 44-46 and 48-64 are cancelled.

Claims 33, 42, 43, 47 are amended.

Claims 65-72 are new.

Amended and New Claims

Claim 33 is amended to narrow the antioxidant to a formula (1) wherein c is 0. Support for this amendment may be found in the claims submitted on September 1, 2004. This set of claims was submitted as a preliminary amendment to the parent PCT filing. All claims were supported by the original PCT parent.

Applicants bring to the Examiner's attention that Group I, formula (1) was the group chosen in the original restriction requirement. Thus Applicants have not made an amendment directed to a separate invention (such as represented by original groups II and III) and would require the filing of a divisional. Further Applicants have amended claim 33 to require dissolution in an oil phase or alcoholic or water phase. Support for this amendment may be found on page 31 of the disclosure, lines 4 and 5 from the bottom. Support is also found in the working Examples on pages 32-35.

Amended claims 42, 43 and 47 are amended to make consistent with claim 33 upon which they depend.

New claims 65-72 are supported by the original PCT claims as below:

New claim 65 is supported by original claim 17.

New claim 66 is supported by original claim 18.

New claim 67 is supported by original claim 19.

New claim 68 is supported by original claim 20.

New claim 69 is supported by original claim 21.

New claim 70 is supported by original claim 22.

New claim 71 is supported by the disclosure on page 29, fourth paragraph.

New claim 72 is supported by the disclosure on page 8, structure (7), page 9, structure (12), page 10, structure (13), page 10, structure (16), page 11, structure (17), page 13, structure (27) and structure (29) and page 14, structure (33).

No new matter is added.

Claims 33, 35, 36, 42, 43, 47 and 48 are rejected under 35 USC 103(a) as being unpatentable over Hoffmann, U.S. Pat. No. 5,643,985 in view of Yoshihara, et al., U.S. Pat. No. 5,242,689 and Lahanas, U.S. Pat. No. 6,042,839.

Hoffmann is cited as teaching the stabilization of plastic materials by the addition of phenolic antioxidants. Hoffmann teaches the stabilization of recycled plastics (Abstract). The recycled materials are thermoplastics such as polyolefins or styrene polymers (col. 1, lines 23-24).

Further Hoffmann teaches a great many antioxidants some of which are encompassed by the present claims. In particular, 2,2"-ethylidene-bis-(4,6-di-tert.butylphenol) and 4,4',4"-[(2,4,6-trimethyl-1,3,5-benzenetriyl)tris-(methylene)]tris[2,6-bis(1,1-dimethylethyl)phenol. See first and third structures in column 7.

Examiner agrees that Hoffman does not teach antioxidants in body-care products.

Cashin teaches a cosmetic stick comprising silicone, solidifying agent and a gel which comprised a hydrocarbon oil containing with a polymer network formed by a synthetic diblock copolymer, a triblock copolymer, or mixtures thereof. See abstract. As kindly pointed out by the Examiner, the compositions of Cashin may also comprise particulates such as polyolefins, particularly polyethylene, polystyrene or polypropylene or mixtures thereof. Examiner opines that the composition of Cashin is in the form of a gel which reads on instant body gel. The Office agrees that Cashin has nothing to say about the addition of antioxidants to his compositions.

Lahanas is cited as teaching cosmetic powder compositions. The preparation of the cosmetic compositions in Lahanas include solubilizing or suspending in water or aqueous/alcohol mixture, col. 3, lines 60-68. Examiner points out that Lahanas teaches that polystyrene and kaolin may be added to his powder compositions. Lahanas also teaches that his powders are formed from hydrated powder comprising a water soluble carboxylated gum and a clay, crosslinked by metal ions. See col. 1, lines 39-41.

Examiner reasons that it would have been obvious to one of ordinary skill in the art to employ the antioxidants of Hoffmann to stabilize cosmetic compositions containing polymeric materials such as polyethylene, polypropylene, and polyvinyl chloride of Cashin because Hoffmann teaches that the

antioxidant compounds are effective in stabilizing the polymeric materials of plastic against thermoxidative degradation and both Cashin and Lahanas include polystyrene materials as cosmetic powder or cosmetic gel compositions.

Thus apparently the motivation, teaching or suggestion to combine the above references seen by the Examiner appears to be the fact that both Lahanas and Cashin teach incorporation of polyolefins within their cosmetic formulations and that "it would be obvious" to use the same antioxidants taught by Hoffmann for the stabilization of the polyolefins added to Cashin and/or Lahanas' cosmetic composition.

Applicants respectfully disagree with this view.

Legal standard

Applicants point out that the Office has the initial burden of establishing a factual basis to support the legal conclusion of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). For rejections under 35 U.S.C. § 103(a) based upon a combination of prior art elements, in *KSR Int'l v. Teleflex Inc.*, 127 S.Ct. 1727, 1741, 82 USPQ2d 1385, 1396 (2007), the Supreme Court stated that a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006). Moreover, all words in a claim must be considered in judging the patentability of that claim against the prior art. *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

Even if it were assumed *arguendo* that a *prima facie* case of obviousness has been established in view of the cited art, a *prima facie* case of obviousness can be rebutted by a showing of unexpected results. (See, for example, *In re Papesch*, 315 F.2d 381, 137 USPQ 43 (CCPA 1963)).

The present claims

The present claims are aimed at a method of preventing photooxidation and autooxidation processes in body-care products selected from body oils, body lotions and body gels which method comprises incorporating by dissolution in an oil phase or alcoholic or water phase an antioxidant of

formula (1). The definition of 'c' is limited to 0 only. Thus the present antioxidants contain NO carbonylic units.

Differences between cited art and present claims

The Applicants and Office are in agreement that neither Lahanas and Cashin recognized that a problem of photooxidation or autoxidation existed within their formulations. The motivation to combine must therefore come from the simple presence of common ingredients (polyolefins) between all three references even though the substrates are fundamentally different. For example, would the polyolefins of Cashin and Lahanas be stabilized when the antioxidant is not incorporated into the solid polymers as in Hoffmann but simply added to the emulsion, lotion or gel as presently required? The fact is, it is impossible to know or predict whether stabilization would actually occur in a more fluid environment such as a gel, lotion or emulsion in view of the cited prior art.

One skilled in the art recognizes that there is a very big difference between solids (such as polymers) and emulsion, lotions and gels. What works in a solid may or may not work in a mobile phase such as an emulsion, lotion or gel substrate.

Thus although Lahanas and Cashin teach the possible presence of polymers recited within Hoffmann, the fact remains that one skilled in the art has absolutely no direction from Lahanas or Cashin to add stabilizers to their formulations; since there is no direction to add them there can hardly be any direction as to how to add them as neither Lahanas or Cashin agreed a stabilization problem existed; and if any suggestion for addition is taught it comes from Hoffmann who melt blends only. Accordingly, even if the references are combined not all limitations of the claim method are taught, that is, there is no suggestion or teaching by any of the references as to the dissolution in a water, oil or alcoholic phase. Further, there would also be no expectation of success, that autooxidation or photooxidation would be prevented by taking the same antioxidants applied in the solid phase of Hoffmann and applying in a mobile phase of Lahanas and/or Cashin.

Declaration

Additionally, Applicants submit a Declaration under 1.132 signed by Oliver Reich, a specialist in stabilization of personal care formulations. Applicants submit a signed copy and an unsigned copy. The unsigned copy is of much better quality and shows the performance differences more clearly. Thus we enclose two copies of the showing.

The Declaration compares a compound containing carbonylic functionality to a compound containing no carbonylic functionality. Note that Hoffmann equates two antioxidants as stabilizers for his polymer substrates. See column 7, lines 55-60 which reads:

Component a is most preferably a pentaerythritol ester or octadecyl ester of β -(3,5-di-tert-butyl-4-hydroxyphenyl) propionic acid or 2,2'-ethylidenebis(4,6-di-tert-butyl-phenol).

Thus Applicants have directly compared these two preferred antioxidants taught in Hoffmann but placed within a mobile substrate containing at least a cosmetic oil or a fragrance in an alcoholic substrate.

The results are surprising in that it takes a very long time to dissolve the carbonylated antioxidant (TT) in the cosmetic oil. Dissolution of the non-carbonylated antioxidant (NOA) is fast. This is an important and surprising advantage to the noncarbonylated antioxidant (NOA).

Further both supposedly equivalent stabilizer (according to Hoffmann) were tested for stabilization of a fragrance in a hydro-alcoholic formulation base. The discoloration of the formulation could not be stopped by the antioxidant Compound (TT) comprising carbonyl groups, however were effectively stopped by compound NOA which represents the non-carboxylated antioxidant. While the formulation turned orange/red despite the presence of carbonylic antioxidant TT, the formulation comprising a non-carbonylic antioxidant showed significantly less discoloration after 2 weeks storage at 50°C. This is quite surprising, as the active moiety on the antioxidant is considered to be the phenolic. And TT contains 4 of such moieties while NOA contains only 2. Thus one skilled in the art would assume that the TT would actually be more effective in prevention oxidation. But clearly it is not and the non-carbonylic antioxidants have clear advantages over the carbonylic type antioxidants as to solubility and prevention of coloration when in the presence of a fragrance.

Thus based on the showing the Applicants submit that the use of antioxidants of formula (1) in body care products have surprising effectiveness when compared to carbonylated type antioxidants.

In light of the arguments above and the submitted showing, the Applicants respectfully submit that the rejections are overcome.

Claims 33, 35, 47 and 48 are rejected under 35 USC 103(a) as being unpatentable over Severns, et al., U.S. Pat. No. 5,723,435 in view of Cashin, US 5,756,082 and Andary, et al., U.S. Pat. No. 5,719,129.

Severns teaches only antioxidants comprising a carbonylated moieties and amine functionality. The present claims are directed to a method of preventing photooxidation and autooxidation processes in body-care products selected from body oils, body lotions and body gels, by incorporating the antioxidants of formula (1). As formula (1) contains no carbonylated or amine moieties there is no overlap between Severns and the presently claimed invention.

Examiner agrees that Severns does not teach body care compositions. The Office has relied on Andary to show that antioxidants can be added to gels. Examiner refers to example 7 and notes that Andary teaches gel compositions which contain antioxidants. Applicants respectfully bring to the examiner attention that the antioxidants added in Andary are BHT, tocopherol and Orapoxide. None of the antioxidants overlap with the compounds of formula (1).

Office further refers to Cashin to make the case that cosmetic stick compositions in the form of a gel are known. While Cashin does teach, polymeric material incorporation into his gels, he does not teach incorporation of antioxidants at all. Applicants are puzzled as to the reliance on this reference. It does describe gel compositions. However, the Office has not explicitly pointed out why the use of this reference would help to make the present claims obvious. No antioxidants are defined. What nexus is there between Severns, Andary and Cashin?

Thus this combination does not teach or suggest the present claim limitations. None of the references teach the antioxidants of formula (1). Accordingly, even if the references are combined and it were proper to combine them, one does not arrive at the present claim limitations.

In view of this, Applicants submit that these rejections are addressed and are overcome.

In view of the present amendments and the above remarks, Applicants submit that each of the 35 USC 103(a) rejections are addressed and are overcome.

The Examiner is kindly requested to reconsider and to withdraw the present rejections.

Applicants submit that the present claims are now in condition for allowance and respectfully request that they be found allowable.

Respectfully submitted,



Shiela A. Loggins
Agent for Applicants
Reg. No. 56,221

BASF Corporation
500 White Plains Road
P.O. Box 2005
Tarrytown, NY 10591-9005
Tel. (914)785-2768
Fax (914)785-7102

Attachment: Fee for a 2 month extension of time, Request for Continued Examination and copies of signed and unsigned declaration under 1.132.